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PATENT
P56559PCTIN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF APPEALS AND INTERFERENCES

Appeal No. _____

In re Application of: LOUIS LAGLER, *et al.*

U.S. Serial No.: 09/890,154

Examiner: HYLTON, R. ANNETTE

U.S. Filing Date: 23 October 2001

Art Unit: 3727

I. A. No.: PCT/CH99/00510

I.A. Filing date: 30 October 1999

Priority date: 27 January 1999

For: CLOSED INJECTION MOULDED CLOSURE PROVIDING MATING UPPER
AND LOWER PARTS COUPLED BY INTEGRALLY FORMED HINGE
CONNECTIONS (as amended)

APPEAL BRIEFPaper No. 33

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Sir:

Pursuant to Appellant's Notice of Appeal filed on 12 April 2005, Appellant hereby appeals to the Board of Patent Appeals and Interferences from the final rejection of claims 1 through 4, 6 through 20, and 36 through 43 as well as withdrawal of claims 35 through 37 and 44 through 46 from consideration, as set forth in the final Office action mailed on 12 January 2005 (Paper No. 20050110) and the first and second Advisory Actions mailed on 30 March 2005 (Paper No. 20050328) and on 13 May 2005 (Paper No. 20050511). Claims 21 through 34 have been allowed as set forth in Paper Nos. 20050110, 20050328, and 20050511. It is noted that, in the third Advisory Action mailed on 8 June 2005 (Paper No. 20050606), claims 11, 12, 19 and 21 through 34 are allowed, claims 1 through 4, 6 through 10, 13 through 18, 20 and 38 through 43 are objected to, and claims 35 through 37 and 44 through 46 are withdrawn from consideration.

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Date: 7/12/05

I.D.: REB/kf

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P56559PCT**I. REAL PARTY IN INTEREST**

Pursuant to 37 CFR §41.37 (as amended), the real party in interest is:

CREANOVA AG
Mühlegasse 12a, 6340 Baar, Switzerland

as evidenced by the Assignment executed by the inventor on 9 August 2001 and recorded in the U.S. Patent & Trademark Office on 1 October 2001 at Reel 012208, frame 0949.

II. RELATED APPEALS AND INTERFERENCES

There are no other appeals and no interferences known to Appellant, Appellant's legal representatives or the assignee which will directly affect, be directly affected by, or have a bearing on the Board's decision in the pending appeal.

III. RELATED U.S. PATENT APPLICATION

Appellant's national phase application which was filed under 35 U.S.C. §371 of PCT International Application No. PCT/IB99/00277, was issued on the 21st of October 2003, as U.S. Patent No. 6,634,060.

IV. STATUS OF CLAIMS

Pursuant to 37 CFR §41.37(c)(1)(iii), claims 1 through 4, 6 through 20 and 36 through 43 stand finally rejected and claims 35 through 37 and 44 through 46 withdrawn from consideration. Of the latter claims, claims 1, 21, 35, 38, 41 and 44 are independent, whereas the remaining claims are dependent. Claims 21 through 34 are allowed as stated in the final Office action (Paper No.

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20050110) and the Advisory Actions (Paper Nos. 20050328 and 20050511). Claim 5 was previously canceled.

It is noted that, per the Advisory Action mailed on 8 June 2005 (Paper No. 20050606), claims 11, 12, 19 and 21 through 34 are allowed, claims 1 through 4, 6 through 10, 13 through 18, 20 and 38 through 43 are listed as being subject to objection,¹ and claims 35 through 37 and 44 through 46 are listed as being withdrawn from consideration. The final Office action (Paper No. 20050110) made a single objection to the language of claim 1; ostensibly, the basis of that objection was removed upon entry of the *Fourth Amendment After Final* on the 25th of May 2005, which was stated by Paper No. 20050606 to have been entered.

V. STATUS OF AMENDMENTS

In compliance with 37 CFR §41.37(c)(1)(iv), the status of all amendments filed subsequent to the final rejection, is:

An *Amendment After Final* proposing amendment of claims 1, 11 and 19 was filed on 11 March 2005 in response to the final Office action (Paper No. 20050110). The *Amendment After Final* filed on 11 March 2005 was not entered by the Examiner as set forth in the Advisory Action (No 20050328).

A *Second Amendment After Final* amending claims 1, 11 and 19 was filed on 3 May 2005. The *Second Amendment After Final* filed on 3 May 2005 was not entered as set forth by the Second Advisory Action (No. 20050511).

¹ Paper No. 20050606, item #7.

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A *Third Amendment After Final* proposing amendment of claims 1, 11 and 19 was filed on 24 May 2005. The Third Amendment After Final was not entered.

A *Fourth Amendment After Final* amending claims 1, 11 and 19 was filed on 25 May 2005. The Advisory Action mailed on 8 June 2005 (Paper No. 20050606) states that the *Fourth Amendment After Final* filed on 25 May 2005 "will be entered" for the purposes of appeal, states that claims "11, 12, 19 and 21-34" are allowed, lists claims "1-4, 6-10, 13-18, 20 and 38-43" as being objected to², and lists claims "35-37 and 44-46" as withdrawn from consideration.

VI. SUMMARY OF CLAIMED SUBJECT MATTER

In conformance with 37 CFR §41.37(c)(1)(v), the specification identifies among the objects of this invention, (i) "to provide a closed injection moulded closure",³ (ii) to provide a closure which has "a large, adjustable opening angle",⁴ and (iii) to provide a closure which has "a substantial snap-on effect",⁵ and the specification states that this invention (iv) "envisages that closed injection moulded closures can be produced ... with or without original warranty seals ...",⁶ (v) states that in the practice of this invention,

"it is also possible for the first time to realize substantially symmetrical flow paths in the hinge region in the case of closed

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- ² Paper No. 20050606, item #7.
³ Specification, page 3, lines 21 and 22.
⁴ Specification, page 3, line 24.
⁵ Specification, page 3, lines 24 and 25.
⁶ Specification, page 4, lines 27 through 30.

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injection molded closures”,⁷

and (vi) observes that,

“[t]he invention envisages that closed injection moulded closures can be produced with the avoidance of the known disadvantages, with or without original warranty seals and with a good design.”⁸

The specification identifies these “known disadvantages” which characterize the prior art by stating that “individual one-part closed injection moulded closures ... are not convincing in their mode of operation [m]ainly owing to too small an opening angle, a poor snap-on effect and inadequate design as well as insufficient sealing ...”.⁹ The specification further explains that,

“[f]rom the point of view of injection moulding too, these closures are not without problems [caused by]... [a]symmetrical flow paths, and unfavourable arrangement of the film hinges and cooling problems ...”.¹⁰

The Appellant states in the specification its opinion that,

“[c]losed injection moulded closures are accordingly advantageous as they are cheaper, permit a simpler mould and furthermore offer the opportunity of integrating an original warranty seal without

⁷ Specification, page 4, lines 14-19.

⁸ Specification, page 4, lines 26-30.

⁹ Specification, page 1, lines 30 through 33, through page 2, lines 1 and 2. In other words, the “closure” produced by prior efforts at closed injection moulding were unsatisfactory, because, among other reasons, both the too small an opening angle and the poor snap-on effect of the lid and its hinges allows the lid to fall into the path of the contents of a container being poured from an open closure when the user tilts the container, thereby splashing the contents from their intended trajectory and soiling the lid with the contents.

¹⁰ Specification, page 2, lines 8 through 12. As used in this passage, “flow paths” refers to the passage of the plastic material relative to the steel mold and die during the closed injection moulding process.

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substantial additional cost.”¹¹

Figure 2 schematically shows one embodiment of a closed injection moulded closure 20 which may be constructed according to the principles of the invention disclosed here. Closure 20 may be constructed with a lower closure part 21 and an upper closure part 22, which is shown here in the closed position in which it is also produced. In the practice of the invention, closure 20 shown here has (in contrast to the prior art) no main hinge connection (unlike the “main hinge connection 5” shown by Figure 1) which is located between closure parts 21 and 22.¹² Closure parts 21 and 22 are instead actively connected to one another by two, preferably symmetrically formed, connecting elements 23.1 and 23.2 (owing to the direction of view, only one connecting element 23.1 is visible in Figure 2; both connecting elements 23.1, 23.2 are visible in Figure 3) and four hinge connections 24.1, 24.2, 25.1 and 25.2. The two connecting elements 23.1 and 23.2 are connected to upper closure part 22 through first hinge connections 25.1 and 25.2 and to lower closure part 21 through second hinge connections 24.1 and 24.2. The first hinge connection and the second hinge connection make an angle ϕ with each other for each of connecting elements 23.1, 23.2. The two planes defined by the two pairs of hinge connections 24.1 and 25.1, and 24.2 and 25.2, respectively

¹¹ Specification, page 1, lines 15 through 19.

¹² Appellant’s appraisal of the state of the art noted that “[i]n order to be able to produce the closure 1 in the closed position of the upper closure part 3, the main hinge connection 5 and the tensions bands 6.1, 6.2 [shown in Figure 1] and in particular their connections to the closure parts 2 and 3 *must* be arranged in such a way that they are accessible in the injection mould (not shown) from the *inside* of the closure (arrow 10) and from the *outside* of the closure (arrow 11). *Particularly, the main hinge is difficult to form.* Owing to these facts, the function (snap-on effect) and the arrangement (open position) of the upper closure part in the case of the closures known from the prior art are very restricted and inadequate. Specification, page 6, lines 10 through 18. Emphasis added. The Board is invited to consider that Appellant’s recognition of the existence of these problems in the art, together with Appellant’s specific identification of the sources of these problems, is itself novel.

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(shown in Figure 3) in turn make an angle ω .

By varying the angles ω and ϕ and their ratio to one another, the snap-on effect and an opening angle α of the closure are determined. The relationship between the opening angle α and the angles ω and ϕ is given by the following formula:

$$\phi = 2 \cdot \arctan \left[\frac{\sin(\alpha/2)}{1 - \cos(\alpha/2)} \cdot \sin(\omega/2) \right]$$

To be able to mould closure 20 in the closed position, connecting elements 23.1 and 23.2 and hinge connections 24.1, 24.2, 25.1 and 25.2 are arranged in such a way that they are accessible in the mould from the inside of the closure (arrow 27) and from the outside of the closure (arrow 28) and can be removed from the mould.¹³ For this purpose, connecting elements 23.1, 23.2 and the associated hinge connections 24.1, 24.2, 25.1 and 25.2 are arranged in a surface which is inclined relative to the closure axis "A" shown by Figure 2.¹⁴ Preferably, hinges constructed according to the patents EP 0 746 512, PCT/EP96/2780 or the Patent Application PCT/1999/00277¹⁵ of the Appellant are used for the closure. Particularly in the case of closures having curved contours in which the connecting elements 23.1, 23.3 have a corresponding convexity or curvature owing to their contour integration, the hinge according to PCT/EP96/2780 is advantageous since the elastic

¹³ Specification, page 7, lines 31 and 32, and page 8, line 1.

¹⁴ Specification, page 8, lines 2 through 5.

¹⁵ Issued on the 21st of October 2003, as U.S. Patent No. 6,634,060.

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strain of the longer free edges 46.1 and 46.2 (See Figure 3) under tension has an especially desired snap-on effect.

Figure 3 shows an embodiment of a closure 20 which may be constructed according to the principles of the invention. A lower closure part 21 and an upper closure part 22 can be seen. These are connected to one another by two connecting elements 23.1 and 23.2 and four hinge connections 24.1, 24.2 and 25.1, 25.2. The two pairs of hinge connections 24.1 and 25.1, and 24.2 and 24.2, define a first plane 31 and a second plane 32, respectively, and make an angle ϕ , respectively.¹⁶ Shorter free edges 45.1 and 45.2 closer to the apex of the angle are preferably substantially pressure-resistant. Planes 31 and 32 in turn make a solid angle ω with one another. Planes 31 and 32 are inclined relative to the closure axis in such a way that they are further away from the closure axis in the region of the lower connection 24.1, 24.2 to (lower closure part 21) than in the region of the upper connection (upper closure part 22).¹⁷ This permits demouldability of the closure while also making it possible to form the desired hinge. In the embodiment shown, connecting elements 23.1, 23.2 are integrated into a convex outer contour of the closure, with a corresponding angle of less than 180° between planes 31 and 32. In other embodiments having a concave outer contour, an angle of greater than 180° is enclosed between the two planes 31, 32. Hinge connections 24.1, 24.2 and 25.1, 25.2 are preferably film hinges as known from the prior art. The desired bending ranges can however, also be different. In the closed position shown here, closure 20 is preferably

¹⁶ Specification, page 9, lines 14 and 15.

¹⁷ Specification, page 9, lines 19 through 24.

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produced by means of injection moulding.¹⁸

Closure parts 21, 22 and connecting elements 23.1, 23.2, and hinge connections 24.1, 24.2, 25.1, 25.2 are functionally separated from one another here by circulating gaps 34 to 38 so that movable upper closure part 22 can assume at least two spatially defined and stable positions relative to the lower closure part 21.¹⁹ There are unstable states (*i.e.*, dead points) between these stable positions so that the upper closure part 22 automatically attempts to achieve the nearest stable position and hence has a snap-on effect. In certain stable positions, in particular in the closed position of closure 20 shown here, closure parts 21, 22, connecting elements 23.1, 23.2, and hinge connections 24.1, 24.2, 25.1, 25.2 are in substantially stress free states (*i.e.*, geometric deformations). In addition to these stress-free, stable positions, non-stress-free stable positions are also possible. In these positions, connecting elements 23.1 and 23.2 and hinge connections 24.1, 24.2, 25.1, 25.2 are typically under a torsional stress and the secondary stresses caused thereby. Connecting elements 23.1 and 23.2 are formed along a shorter free edge 45.1 or 45.2 in such a way that they do not buckle under the pressures occurring during opening and closing. The longer free edges 46.1 and 46.2 are preferably designed in such a way that they lengthen elastically and reversibly under the tensile stresses occurring. This can be achieved, for example, by a three-dimensional curvature or specific choice of material. Closure parts 21 and 22 advantageously have a certain elasticity so that,

¹⁸ Specification, page 10, lines 3 through 5. A clearer, and less idiomatic translation of the original German language text would be, "the closure 20 is preferably produced by means of injection moulding in the closed position shown here."

¹⁹ In other words, upper closure part 22 will be forced to remain in a wide opened position, to exhibit a large and stable opening angle, regardless of whether the container is vertically upright or tilted during pouring of its contents.

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if required, they undergo reversible elastic deformation under the loads occurring. Connecting elements 23.1 and 23.2 are advantageously formed in such a way that they deform in a controlled manner owing to the torsional forces occurring. The coordination between closure parts 21 and 22 is adjustable through the torsional rigidity of connecting elements 23.1, 23.2. The desired snap-on effect can thus be achieved by the closure parts or by the connecting elements individually or in combination with one another. Owing to the low torsional rigidity of connecting elements 23.1 and 23.2, it is possible to achieve intermediate states in which the closure parts are stable relative to one another but do not assume tension-free positions; this enables the manufacture of closures that have a plurality of open positions.

VII. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

1. Whether claims 1 through 4 and 6 through 20 were improperly rejected under the second paragraph of 35 U.S.C. §112 as being indefinite for failing to particularly point out and distinctly claim the subject matter which Appellant regards as the invention?
2. Whether claims 1, 2, 6 through 10, 13, 14, 15, 17 and 38 through 43 were improperly rejected under 35 U.S.C. §102(b) as being anticipated by Nozawa (U.S. Pat. No. 5,148,912)?
3. Whether claims 3, 4 and 16 were improperly rejected under 35 U.S.C. §103 as being unpatentable over Nozawa '912 in view of Dubach (US 5,392,938)?
4. Whether claim 18 was improperly rejected under 35 U.S.C. §103(a) as being

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unpatentable over Nozawa '912 modified according to Altherr (U.S. Pat. No. 5,270,011)?

5. Whether claim 20 was improperly rejected under 35 U.S.C. §103(a) as being unpatentable over the Examiner's proposed combination of Nozawa '912 and Gach *et al.* (U.S. Patent No. 4,826,026)?

VIII. ARGUMENT

A. Claim Rejections - Second Paragraph Of 35 U.S.C. §112

Claims 1 through 4 and 6 through 20 stand rejected under the second paragraph of 35 U.S.C. §112, as possibly being indefinite for failing to particularly point out and distinctly claim the subject matter which Appellant regards as the invention.

In support of this rejection, the Examiner wrote that,

"Claim 1 recites the limitation 'the planes' and 'each said plane' in lines 9 and 11, respectively. There is insufficient basis for this limitation in the claim. Previously set forth in the claim is 'each said hinge connections making a first angle with one another and defining a plane.' This does not positively set forth more than one angle."

Appellant respectfully suggests that this excerpt indicates that the Examiner has not understood the concepts disclosed by the application. The actual text of claim 1 reads:

"two connecting elements connected to the first closure part and the second closure part by two pairs of hinge connections, **each said pair of hinge connections having a first hinge connection and a second hinge connection, each said first hinge connection connecting upper sides of said connecting elements to said first closure part, each said second hinge connection connecting bottom sides of said connecting elements to said second closure part, each said hinge connections**

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making a first angle (ϕ) with one another and defining a plane ...²⁰

Recognizing that the preceding text of claim 1 defines,

"two connecting elements connected to the first closure part and the second closure part by *two pairs* of hinge connections ..., "²¹

then the subsequent definition set forth by claim 1, of:

"each said hinge connections making a first angle (ϕ) with one another and defining a plane ... "²²

necessarily produces a "first angle (ϕ) with one another" for both of the "*two pairs* of hinge connections" earlier set forth in claim 1, thereby *positively setting forth* more than one angle.²³ In point of fact, claim 1 does positively set forth more than one angle,²⁴ and this conforms precisely to

²⁰ As was earlier noted, Appellant has proposed to amend this text to read "two connecting elements connected to the first closure part and the second closure part by two pairs of hinge connections, each said pair of hinge connections having a first hinge connection and a second hinge connection, each said first hinge connection connecting upper sides of said connecting elements to said first closure part, each said second hinge connection connecting bottom sides of said connecting elements to said second closure part, each said pair of hinge connections making a first angle (ϕ) with one another and defining a plane" This amendment is immaterial to the issue raised by the Final Office action under the second paragraph of 35 U.S.C. §112.

²¹ Claim 1, lines 4 and 5.

²² As noted above, Appellant has proposed to amend this text to read "each said pair of hinge connections making a first angle (ϕ) with one another and defining a plane" This amendment is immaterial to the issue raised by the Final Office action under the second paragraph of 35 U.S.C. §112.

²³ The Final Office action questioned whether claim 1 does "positively set forth more than one angle" because of the Examiner's observation that "previously set forth in the claim is 'each said hinge connections making a first angle with one another and defining a plane.'"

²⁴ The language of claim 1, defines "*two pairs of hinge connections*", with "*each said pair of hinge connections making a first angle (ϕ) with one another and defining a plane ...* ." Figure 3 illustrates both of these first angles (ϕ) and both of the planes 31, 32, and their respective areas of intersection, as well as the angle (ω) included between planes 31, 32.

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what Appellant teaches, as is expressly shown in the application by the discrete presence of two such "first angle (ϕ)" in Figure 3, both of which are separately labeled and each of which is shown as associated with a different pair of the "hinge connections."

In claim 1, each *pair* of hinge connections makes a first angle and defines *a plane*. Since claim 1 expressly states that:

"two connecting elements connected to the first closure part and the second closure part by two pairs of hinge connections ...,"²⁵

and that:

"each said pair of hinge connections having a *first hinge connection* and a *second hinge connection* ...,"²⁶

claim 1 in point of fact, positively defines, and thus provides express antecedent basis for the two pairs of hinge connections recited in claim 1. Moreover, each pair of these two pairs of hinge connections is also positively set forth in claim 1 by the clause,

"each said pair of hinge connections having a first hinge connection and a second hinge connection ...,"²⁷

and by the subsequent clause which reads:

"each said first hinge connection connecting upper sides of said connecting elements to said first closure part, each said second hinge connection connecting bottom sides of said connecting elements to said second closure part"²⁸

²⁵ Claim 1, lines 4 and 5.

²⁶ Claim 1, lines 5 and 6.

²⁷ Claim 1, lines 5 and 6.

²⁸ Claim 1, lines 6 through 8.

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Consequently, the text of claim 1 provides the phrases "the planes" and "each said plane" with expressly written, correct and technically accurate antecedent basis. Accordingly, the text of claim 1 provides no basis to support an assertion of indefiniteness under the second paragraph of 35 U.S.C. §112.²⁹

In further support of this rejection, Paper No. 20050110 asserts that:

"Previously set forth in the claim is 'each said hinge connections making a first angle with one another and defining a plane.' This does not positively set forth more than one angle."³⁰

In point of fact, either of the phrases "each said hinge connections making a first angle"³¹ or "each said pair of hinge connections making an angle"³² preceded by the phrase "two pairs of hinge connections ..."³³ necessarily, and positively sets forth more than one angle, contrary to the assertion of Paper No. 20050110.³⁴

In view of this demonstration of the clarity of the pending claims, there is no basis on the

²⁹ Appellant has earlier requested clarification under 37 CFR §1.104 for the basis for this rejection; despite Appellant's request, no clarification has been given by the Examining Staff.

³⁰ The genesis of the language attributed by Paper No. 20050110 is unclear; the language of claim 1 before the Board reads "each said pair of hinge connections making a first angle (ϕ) with one another and defining a plane"

³¹ This is a somewhat incomplete paraphrase of the language of claim 1 at the time Paper No. 20050110 was written.

³² This is the language of amended claim 1 before the Board today.

³³ Claim 1, line 5.

³⁴ *Each* is defined by, "[b]eing one of two or more considered individually" *The American Heritage Dictionary of The English Language*, 4th Ed., p.560. "Used before a singular noun to give the same sense in relation to individuals as does *both* or *all* before the plural noun in relation to the category or aggregate of them (almost = **EVERY**, but with reference to the the separate members). *Shorter Oxford English Dictionary*, 5th Ed.

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record before the Board to permit this rejection to be sustained.

B. Claim Rejections - 35 U.S.C. §102(b)

Claims 1, 2, 6 through 10, 13, 14, 15, 17 and 38 through 43 stand finally rejected under 35 U.S.C. §102(b) as anticipated by Nozawa (U.S. Pat. No. 5,148,912). This rejection may not be sustained for the following reasons.

First, the basis given by the Examiner to support this rejection is geometrically impossible and is contrary to the express teachings of Nozawa '912. The Examiner asserted that the closure of Nozawa '912 illustrated in figures 6 through 9 anticipates the closure defined by claims 1, 38 and 41, and further stated that, regarding the inclination of the planes of the hinge elements, the feature (*i.e.*, each of said planes is inclined relative to a central closure axis) is not recited in the rejected claims. The fact is that Appellant's "each said plane"³⁵ of the hinge connections is not taught by Nozawa '912 as being "inclined relative to a central closure axis"³⁶, as may be confirmed by even a cursory examination of Figures 3, 4 and 5 of the first embodiment of Nozawa '912 and of Figures 7, 8 and 9 of the second embodiment of Nozawa '912; the exhaustive geometric analysis provided by Figures 5 and 9, which confirms the illustrations of Figures 3 and 8, respectively of Nozawa '912 by consistently showing bottom side 7a and top side 7b as being mutually parallel, as being parallel with center line 30, and essentially vertical when lid 3 is in its closed state, may not be summarily ignored in an application of 35 U.S.C. §102(b).³⁷ Nowhere does the final Office action address

³⁵ Appellant's claim 1, line 11.

³⁶ Appellant's claim 1, lines 11 and 12.

³⁷ Nozawa '912 depends in the structure for the operational structure of his first and second embodiments, upon the relative movements of bottom sides 7a, top sides 7b, and slant sides 7c, 7d of resilient belt plates 7 shown respectively by Figures 5 and 9, during the opening and closing of lid 3. The attention of the Board is invited to note that the planes of circles 31,

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the glaring inconsistencies between the Examiner's interpretation of Nozawa '912 and the actual teachings expressed by Nozawa '912; this deficiency is the antithesis of the completeness mandated by 37 CFR §1.104(a), (b) and (c). Nowhere does Nozawa '912 suggest an inclination between his hinge connections and an axis of closure; consequently, this silence in the art may not be twisted like a "noise of war" in the light provided solely by Appellant. The planes shown by these Figures of Nozawa '912 are parallel, and can never therefore intersect either (i) one another or (ii) the axis of closure of Nozawa '912. Absent either feature, there is no anticipation under 35 U.S.C. §102(b), and maintenance of this rejection would be improper. The Examiner's assertion is a geometric impossibility and lacks the completeness required under 37 CFR §1.104(a), (b) and (c), and fails to make a *prima facie* showing of anticipation under 37 C.F.R. §102(b).

Second, in Paper No. 20050110 the Examiner also argued that any axis that is centrally located on the closure is a central axis to which the planes are inclined either horizontally or vertically. This assertion is immaterial; under 35 U.S.C. §102(b), the Examiner must consider each of these claims in their entireties, rather than in isolated phrases. The "planes" formed by Nozawa '912 illustrated in Figures 6 through 9 are consistently and uniformly taught as being vertical when that closure is in closed state, and can not be now argued without any factual justification as being inclined relative to a "closure axis".

More specifically, the attention of the Board is invited to note that (i) the combined circular structures of main body 1 and lid 3 of Nozawa '912 are right cylindrical, rather than conical, in

32 shown in Figures 3 and 8 of Nozawa '912 are oblique to, rather than co-planar with, the plane of the page on which Figures 3 and 8 are drawn, because the surface of object 3 portrayed by Figures 3 and 8 is cylindrical, rather than flat. Consequently, as illustrated by Figures 2 and 7, the two triangular planes formed by resilient belt plates 7, 7 when lid 3 is in an open position, are oblique and overlapping, as is confirmed by Figures 3 and 8, and to a lesser extent, by Figures 2 and 8.

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shape,³⁸ and that (ii) in the closed position, shown with solid lines in Figure 8,³⁹ the two pairs of opposite sides 7a, 7b of resilient belt plates 7, 7, namely bottom sides 7a and top sides 7b shown in Figures 8 and 9, are **parallel to one another**.⁴⁰ These observations are also confirmed by the top view of the first embodiment in Figure 4 (note that Nozawa '912 does not provide a separate top view showing the second embodiment in its closed state) where **parallel** opposite bottom sides 7a and top sides 7b for both resilient belt plates 7, 7 lie **perpendicular** to the plane of the drawing and lie **perpendicular** to the plane formed by Sheet 2 of the drawings.⁴¹ The axis of closure is therefore, also **perpendicular** to the plane of the drawing and to the Sheet 2 of the drawing.

Planes formed by opposite parallel sides 7a, 7b, for both resilient belt plates 7 which lie **perpendicular** to the plane of the drawing and to the plane formed by Sheet 2 of the drawing⁴², are therefore necessarily parallel to one another. An axis of closure such as center line 30,⁴³ which is also perpendicular to parallel opposite sides 7a, 7b, for both resilient belt plates 7, 7, lies

³⁸ The elevation view of Figure 8 confirms the cylindrical, rather than conical, shape of the combined main body 1 and lid 3; any line other than a central axis which extends between the base and an apex of a conical shape forms an oblique angle relative to the central axis. In Figure 8 the extreme left and right sides of main body 1 and lid 3 are colinear and parallel.

³⁹ Paper No. 20050110 premises anticipation rejection of claims 1, 38 and 41 upon the second of the four embodiments taught by Nozawa '912, which are illustrated by Figures 6 through 9. The discussion of Nozawa '912 presented here is substantially similar to an equivalent analysis of the first embodiment of Nozawa '912 illustrated by Figures 1 through 5.

⁴⁰ This observation is confirmed by Nozawa '912, which teaches in column 3, lines 54 through 59, that "each of the resilient belt plates 7 may form as shown in FIG. 3 a trapezoid having the bottom side 7a and the top side 7b *which are parallel to each other ...*."

⁴¹ Note that Sheet 2 of the drawing contains Figures 3 and 4, rather than Figure 2.

⁴² Note that Sheet 2 of the drawing contains Figures 3 and 4.

⁴³ Center line 30 is illustrated by Figure 8 of Nozawa '912.

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perpendicular to the plane of the drawing and to the Sheet 2 of the drawing, is therefore parallel to opposite bottom sides 7a and top sides 7b. Consequently, planes formed by opposite sides 7a, 7b of resilient belt plates 7, 7 can not:

- (i) both perpendicularly intersect the plane of the drawing and Sheet 2 of the drawing, and
- (ii) also be *inclined relative to a central closure axis*⁴⁴ when central closure axis 30 is simultaneously parallel to the parallel opposite sides 7a, 7b of resilient belt plates 7, 7.

The record is devoid of any factual basis for the Examiner's assertion that "the hinge planes are inclined relative to a closure axis (to the degree 'a closure axis' is set forth)" because **first**, Nozawa '912 teaches nothing about "hinge planes" being inclined relative to any geometric construct, **second**, Nozawa '912 consistently shows bottom sides 7a and top sides 7b parallel and vertical when lid 3 in all of its drawings when lid 3 is in its closed position, and **third**, suggestion that Nozawa '912 does not even use the word⁴⁵ for that concept. In short, the assertions stated in Paper No. 20050110 is unsupported by the express teachings of Nozawa '912; furthermore, that basis depends upon a geometric impossibility. Absent technical inaccuracy in Figures 3, 4, 5, 8 and 9 of Nozawa '912, the record before the Board provides no basis to sustain this rejection.

Claims 1, 38 and 41 expressly recite that *each of said planes is inclined relative to a central closure axis*. (See line 12 in claim 1, line 12 in claim 38, lines 15-16 in claim 41.) Nonetheless, the

⁴⁴ Claim 1, lines 11, 12.

⁴⁵ That is, Nozawa '912 does not use the word "inclined" to describe the relation of a plane formed by sides 7a, 7b, 7c, 7d relative to any geometric feature (e.g., such as a side wall of lid 3 or his centerline 30) of his structure.

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Examiner improperly asserted that the above feature is not recited in the claims; although clarification from the Examiner was requested pursuant to 37 CFR §1.104, not was given on the record before the Board.

In view of the Examiner's reasoning recited in the Office action, it is not clear why the Examiner thinks that the planes of Nozawa '912 are inclined to the closure axis. If the Examiner conceived that a "closure axis" can be a line (*i.e.*, an imaginary slant line in Figs. 6, 8 and 9 of Nozawa '912) which is different from the line (*i.e.*, closure axis A) as shown in Fig. 2 (as amended on September 25, 2004) of the present application, please consider the meaning of the term "closure axis."

"The terms of a claim will be given their ordinary meaning, unless it appears that the inventor used them differently." *ZMI Corp. V. Cardiac Resuscitator Corp.*, 844 F.2d 1576, 6 USPQ2d 1557 (Fed. Cir. 1988). In defining the meaning of key terms in a claim, reference may be had to the specification, the prosecution history, prior art, and other claims. *Minnesota Mining & Manufacturing Co. V. Johnson & Johnson Orthopaedics, Inc.*, 976 F.2d 1559, 24 USPQ2d 1321 (Fed. Cir. 1992).

Here, the "closure axis" is clearly defined in the specification and/or Fig. 2 (See "A", in Fig. 2, which is referred to as a closure axis.)

In response to the Appellant's response filed on October 13, 2004, the Examiner merely argued that the central vertical axis depicted in the drawings is not read into the claims. The Examiner did not provide the reason why reference cannot be the specification for defining the meaning of key terms in a claim.

Even assuming that the Examiner successfully traverses the above reasoning, the Board's attention is invited to consider that the ordinary or dictionary meaning of the term "axis" is (1) a

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straight line about which a body or geometric object rotates or may be conceived to rotate, or (2) a line about which the object is symmetric, or (3) a center line to which parts of a structure or body may be referred, or (4) an imaginary line to which elements of a work of art are referred for measurement or symmetry and the like. (*The American Heritage Dictionary of the English Languages*, 3rd ed., Houghton Mifflin Company.)

With respect to the term “inclined”, it should be noted that the ordinary and/or dictionary meaning of “incline” is “to deviate from the horizontal or vertical.” (*The American Heritage Dictionary of the English Languages*, 3rd ed., Houghton Mifflin Company.) Unlike the Examiner’s definition of “the incline angle”, an inclination angle under the ordinary and/or dictionary meaning does not include either 90 degrees, 180 degrees, or 270 degrees.

Even under the ordinary or dictionary meaning of the definition of “central closure axis”, the planes of Nozawa ‘912 are not inclined relative to any conceivable central closure axis in Figs. 6-9 for the following reasons.

As shown in Fig. 8 of Nozawa ‘912, Nozawa ‘912 clearly shows that the planes are vertical. Also, Fig. 9 of Nozawa ‘912 more clearly shows that the plane (defined by 7a, 7c(11), 7b, and 7d(10)) in a closed position is vertical. Since the planes of Nozawa ‘912 in a closed position are vertical in a closed position as shown in Figs. 8 and 9, the only imaginary lines which can be inclined relative to the planes in Figs. 6, 8 and 9 of Nozawa ‘912 are imaginary slant lines. However, in view of the definition of the term “central closure axis” in the specification as well as the ordinary or dictionary meaning, any imaginary slant line in Figs. 6, 8 and 9 of Nozawa ‘912 cannot be regarded as a “central closure axis”.

It should be noted that an inclination of *a plane relative to a line* (i.e., closure axis) is different from an inclination of *each line (on the plane) relative to the line* and an inclination of *a*

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plane relative to another plane. That is, here, the fact that some lines (*i.e.*, 7c(11), 7d(10)) in the closed position may be inclined relative to the line of the closure axis does not mean that the plane defined by the hinge connections (*i.e.*, 7c(11) and 7d(10)) is not inclined relative to a closure axis. Likewise, the fact that the plane defined by the hinge connections (*i.e.*, 7c(11), 7d(10)) in the closed position may be inclined relative to another imaginary plane does not mean that the plane defined by the hinge connections (*i.e.*, 7c(11) and 7d(10)) is not inclined relative to a closure axis.

Nonetheless, the Examiner did not traverse the Appellant's reasoning, and merely repeated the conclusion that "the planes are inclined either horizontally or vertically." For the foregoing reasons, the Examiner's anticipation rejection is not proper.

Third, Nozawa '912 does not teach the feature of "the two connecting elements and the two pairs of hinge connections are accessible in the mould from the inside of the closure and from the outside of the closure." Apparently, the Examiner's statement that:

"the limitation of the hinge connections being accessible in the mold from the inside of the closure and from outside the closure does not structurally limit the finished claimed product,"⁴⁶

is based upon a misunderstanding of U.S. practice. Nothing in the second paragraph of 35 U.S.C. §112 provides a criterion for identifying one limitation as a "structural limitation" and a different limitation as a "non-structural limitation."

Claims 1, 38 and 41 define a structure which is different and novel from those of Nozawa '912; by way of one example, "plug 4" exists in Nozawa '912 for the sole function of closing its "pouring port 2". If this function is accurately stated by Nozawa '912, how could the Examiner possibly understand that "the two pairs of hinge connections are accessible in the mould from the

⁴⁶ Paper No. 20050110, Examiner's Comments, page 3.

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inside of the closure ...” when “plug 4” closes “pouring port 2”?⁴⁷ As explained by Nozawa ‘912,

“[w]hen the lid is closed over the cap, a pair of resilient belt plates 7 are stored within each of the grooves 8 and 9.”⁴⁸

The mating of “plug 4” with “pouring port 2”, together with the erection of the walls of grooves 8, 9 between “resilient belt plates 7” and the interior hollow chamber between closed lid 3 and main body 1, among other aspects of Nozawa ‘912 singularly denies to Nozawa ‘912 Appellant’s access “in the mould from the inside of the closure and from the outside of the closure”⁴⁹ because were an attempt be made to mould Nozawa ‘912 in Appellant’s *closed position*⁵⁰, a sealed, hollow chamber would be created between the underside of lid 3 and the “upper surface of the main body (1)”⁵¹ of Nozawa ‘912 which would deny to Nozawa ‘912 Appellant’s advantage of *hinge connections* [that] *are accessible in the mould from the inside of the closure and from the outside of the closure.*”⁵² These modifications of Appellant’s Figures 3 and 4 illustrate this accessibility in the closed mould practice of Appellant’s claims.

⁴⁷ Appellant’s claim 1, lines 12 and 13.

⁴⁸ Nozawa ‘912, column 3, lines 51-53. The walls of these grooves seal off the hollow interior chamber between the underside of lid 3 and the upper side of main body 1, thereby denying Appellant’s accessibility to resilient belt plates 7, etc. of Nozawa ‘912 from the inside of the closure.

⁴⁹ Claim 1, lines 12-14, claim 38, lines 12-14, and claim 41, lines 16-18.

⁵⁰ Claim 1, line 11.

⁵¹ Nozawa ‘912, column 2, lines 10 and 11.

⁵² Claim 1, lines 12 and 13.

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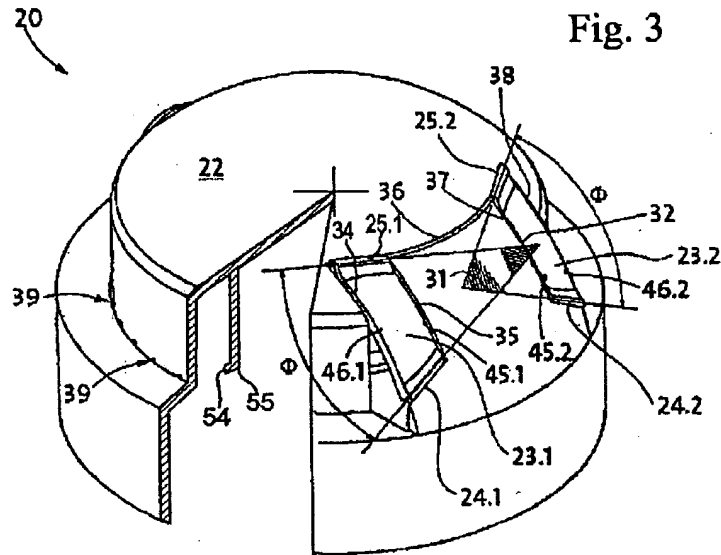
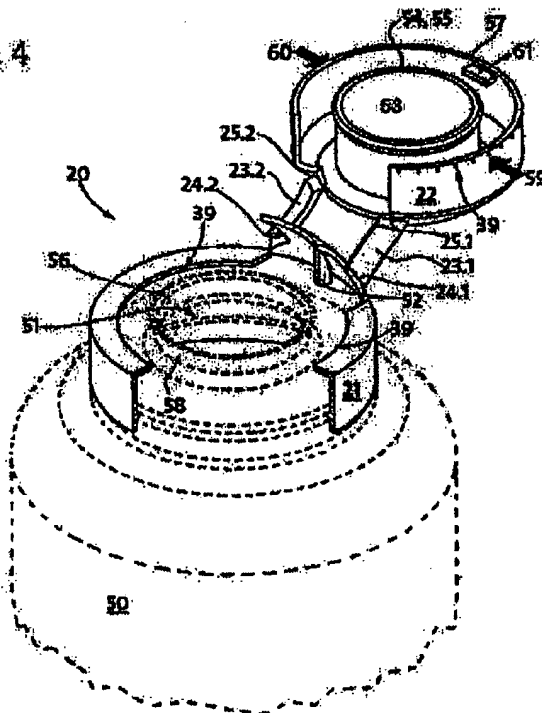


Fig. 4



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Even ignoring *arguendo* the absence of teaching or suggestion in the record before the Board for moulding Nozawa '912 in Appellant's closed position, any effort to mould Nozawa '912 in a closed position would necessarily require additional process steps such as opening the Nozawa '912 closure and removal of a slug portion of the mould positioned between the underside of lid 3 and the "upper surface of the main body (1)"⁵³ of Nozawa '912, an incur an additional, and unwanted, manufacturing complication and a concomitant expense.

During examination, Appellant noted that the action set forth in Paper No. 20050110 was incomplete under 37 CFR §1.104(a) and (b) and requested from the Examiner have evidence of record to the contrary, and requested clarification and disclosure of that evidence under 37 CFR §1.104(c)(2); despite these requests, neither clarification nor evidence has been placed on the record, and that record is inadequate to sustain this rejection. Appellant notes that different implementations of these claims may look quite different from one another. Nothing in any clause of 35 U.S.C. §102(b) distinguishes between "structural limitations" and other types of limitations. Consequently, the failure of fully consider these claims in their respective entireties is improper and the rejection should not be sustained.

The Examiner stated that claims 1, 2, 6-10, 13, 14, 15, 17 and 38-43 are a product-by process claim, and that process limitation in a product-by-process claim is not considered for determination of patentability.

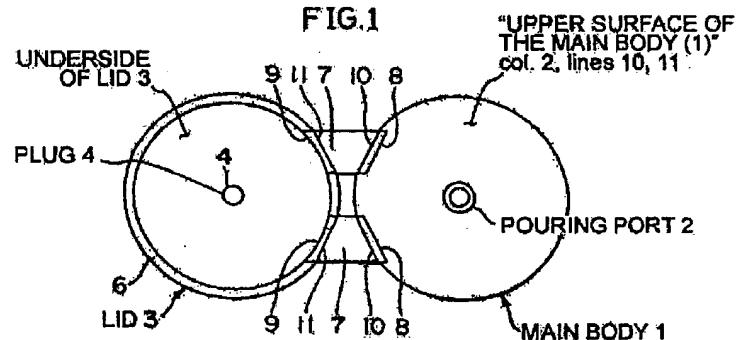
The Examiner's assertion is not proper for the following reasons. The accompanying figure taken from Nozawa '912 illustrates the first embodiment in its opened orientation in order to show the exposed upper surface of the main body (1) and the underside of lid 3, in relation to the inside

⁵³ Nozawa '912, column 2, lines 10 and 11.

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surfaces of resilient belts 7.

U.S. Patent No. 5,148,912



illustrate the significance of these features of the rejected claims. In Nozawa '912, *when the main body 1 and lid 3 are in their closed position*, plug 4 closes pouring port 2; necessarily, a cavity is formed between the "upper surface of the main body (1);"⁵⁴ What the Examiner has ignored is, among other things, the fact that connecting elements 23.1, 23.2 (*see*, for example either Figure 3 or Figure 4 of Appellant's original specification) are accessible in the mould from the inside of the closure and from the outside of the closure, as stated in these claims. The fact that this accessibility is unavailable with Nozawa '912 negates the possibility of anticipation under 35 U.S.C. §102(b), and this rejection must be withdrawn.

Moreover, returning again to the Examiner's statement that:

"the limitation of the hinge connections being accessible in the mold from the inside of the closure and from outside the closure does not

⁵⁴ Nozawa '912, column 2, lines 10 and 11.

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structurally limit the finished claimed product,”⁵⁵

the fact that process terms are used in a product claim does not necessarily mean that the claim is product-by-process claim. For example, such terms as “etched,” “welded,” “inter-bonded by interfusion,” and “condensation product” can be used to describe the physical characteristics of a product without changing the character of the claim into a product-by-process claim. Although those words appear to be process limitations, they are considered limitations on the structure of the invention, not words descriptive of a process. *In re Garnero*, 412 F.2d 276, 162 USPQ 221 (CCPA 1969). Moreover, and overlooked by the Examining Staff is the utter absence of any “written description” or other teaching of “the process of making” the device of Nozawa ‘912.⁵⁶ Ostensibly, the device of Nozawa ‘912 are practiced by either deformation molding or alternatively, by hand molding; the point is, that Nozawa ‘912 does not teach either injection molding or closed injection molding, a feature of Appellant’s claim 1. Consequently, there is not basis on the record to sustain the final rejection of claim 1.

The Examiner has, in essence, disregarded the guidance provided by the Court in this decision, and erroneously asserted that the feature is of a molding process, not of a finished product. The issue is not whether the feature is a process limitation, but whether the feature is considered limitations on the structure of the invention although the words appear to be a process limitation.

⁵⁵ Paper No. 20050110, Examiner’s Comments, page 3.

⁵⁶ 35 U.S.C. §112(a) mandates that all applications have a “specification” with “a written description of the invention, and the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art ... to make and use the same” Where does Nozawa ‘912 present any teaching about either a “closed injection molding” process or an “open injection molding” process. In point of fact, Nozawa ‘912 does not even suggest that his device is amenable to manufacture by injection molding.

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(See *In re Garnero*, 412 F.2d 276, 162 USPQ. 221 (CCPA 1969)).

Here, the description of the product in the mold should be regarded as a structural limitation. The shape of a mold is necessarily translated into the shape of a product. Even if the recited feature in claims 1, 38 and 41 includes process terminology, the recited features describe the physical attributes and characteristics of the product by describing the arrangement of the product, and thereby provides a basis for readily distinguishing those claims under 35 U.S.C. §102(b) from the prior art.

As admitted by the Examiner and MPEP §2113, even if product-by-process claims may not be limited to the manipulation of the recited steps, product-by-process claims are limited by *the structure implied by the steps*. It should be noted that these claims are distinguished from those situations where the product of *the prior art* is merely manufactured by a different process which does not imply a novel structure.

Appellant's feature of "the two connecting elements and the two pairs of hinge connections are accessible in the mould from the inside of the closure and from the outside of the closure"⁵⁷ implies the structure of the product for the above reasons. Therefore, the structure implied by the steps (*i.e.*, the feature of "the two connecting elements and the two pairs of hinge connections are accessible in the mould from the inside of the closure and from the outside of the closure") should be considered for patentability determination.

The Examiner argued that once the closure is removed from the mold, one can not determine the accessibility of the hinge connections with regard to the insider or the outside of the mold. Also, and contrary to the Examiner's assertion, the feature recited in claims can be determined from the

⁵⁷ Claim 1, lines 13 and 14; claim 38, lines 14 and 15; and claim 41, lines 16 thorough 18.

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final product. Therefore, claims 1, 2, 6-10, 13, 14, 15, 17 and 38-43 are not anticipated by the prior art.

C. Claim Rejection Of Claims 3, 4 And 16 Under 35 U.S.C. §103(a)

1. Claims 3, 4 and 16 stand rejected under 35 U.S.C. §103 as being unpatentable over Nozawa '912 in view of Dubach (US 5,392,938). Appellant respectfully traverses this rejection for the following reasons.

Supplementation of Nozawa '912 with Dubach '938 fails to remedy the deficiencies in the primary reference noted in the foregoing paragraphs.

The Examiner asserted that Nozawa '912 taught the claimed closure except for at least one element initially connecting the two closure parts in the closed position, and that Dubach '938 taught that:

"it is known to initially secure two hinged closure parts together."⁵⁸

Dubach '938 fails however, to remedy the foregoing deficiencies in the primary reference.

Claim 3

The record before the Board provides no basis for sustaining this rejection.

First, claim 3, defines, *inter alia*, a structure with:

"the first and the second closure parts, in the closed position of the closure, connected by at least one coupling element which is destroyed or removed when the closure is opened for the first time."

The Examiner's proposed combination teaches "a plastic closure" with a:

⁵⁸ Paper No. 20050110 does not explain the import of this observation.

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“security band 3 [that] is injection molded via bars 6 to the lower edge 2’ of the upper part 2. The bars 6 form predetermined breaking points which are destroyed when the security band 3 is removed.”⁵⁹

The Examiner’s proposed combination including Dubach ‘938 emphatically teaches that,

“[s]nap hinge closures are for the most part *injection-molded in a completely open state* and are closed afterwards.”⁶⁰

The Examiner’s proposed combination including Dubach ‘938 also expressly teaches that,

“[i]t is one object of this invention to provide a snap hinge closure of the previously mentioned type ...”⁶¹

Claim 3 however, expressly defines a “closed injection moulded closure ...” Singularly absent from the Examiner’s proposed combination is any teaching of anything other than a closure that is “injection-molded in a *completely open state*”; completely absent is Applicant’s “closed injection moulded closure ...”, whether with, or without Appellant’s “coupling element which is destroyed or removed when the closure is opened for the first time.” The assertions set forth in Paper No. 20050110 are specious and without merit.⁶² The attention of the Board is invited to observe that it is Appellant alone who suggested, and then taught that,

“[c]losed injection moulded closures are accordingly advantageous

⁵⁹ Dubach ‘938, column 2, lines 63 through 67.

⁶⁰ Dubach ‘938, column 1, lines 23 through 25.

⁶¹ Dubach ‘938, column 2, lines 6 and 7.

⁶² Moreover, Appellant’s originally filed specification, beginning on page 1, with line 15, explains the advantage of close injection molding for the incorporation of “an original warranty seal without substantial additional cost.” Under U.S. practice, the difference between Appellant’s “closed injection moulded closure” and the “complete open state” of the Examiner’s proposed combination, and Applicant’s advantage of cost and ease in integrating an “original warranty seal” in his closure serve as evidence of non-obviousness to patentably distinguish claim 3 over the prior art.

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as they are cheaper, permit a simpler mould and furthermore *offer the opportunity of integrating an original warranty seal without substantial additional cost.*"⁶³

Imputation of this teaching to the proposed combination is unsupported by the record before the Board. Consequently, there is no basis on the record before the Board to establish a *prima facie* showing of obviousness, and this rejection should not be sustained.

Second, claim 3, also defines the structure of its closure as having "the first and the second closure parts, in the closed position of the closure, as:

"connected by at least one coupling element which is destroyed or removed when the closure is opened for the first time."

The Examiner's proposed combination however, teaches a:

"security band 3 [that] is injection-molded via bars 6 to the lower edge 2' of the upper part 2. The bars 6 form predetermined breaking points which are destroyed when the security band 3 is removed."⁶⁴

In other words, removal of security band 3 causes destruction of bars 6. There is nothing in the Examiner's proposed combination that teaches destruction of "at least one coupling element *which is destroyed or removed when the closure is opened for the first time.*" The destruction which occurs in the Examiner's proposed combination occurs regardless of whether or not the closure is opened after the removal of the removal of security band 3 has already completed the destruction of bars 6. Claim 3 has carefully specified the exact time of the destruction of the "coupling element", namely *when* the "closure is opened for the first time." The removal of security band 3 is unrelated chronologically to the opening of the closure "for the first time", and is also unrelated to whether the

⁶³ Specification, page 1, lines 15 through 19.

⁶⁴ Dubach '983, column 2, 63 through 67.

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closure is in fact ever opened after completion of the destruction of bars 6. In short, the Examiner's proposed combination lacks a teaching of Appellant's simultaneous nexus between the opening "for the first time" and the destruction, or removal, of the coupling element, this nexus is wholly absent from the Examiner's proposed combination. Moreover, the structure of the Examiner's proposed combination is taught as being born in a "completely open state and closed afterwards."⁶⁵ In short, the structure of the Examiner's proposed combination is never "opened for the first time" as is defined by claim 3", and can not be relied upon to teach a structure the depends upon an opening "for the first time"⁶⁶ to endow that structure with a particular aspect, such as Appellant's "coupling element." The possibility that the destruction of bars 6 in the Examiner's proposed combination may occur in a sequential series of acts by a user attempting to open a container does not convert the "re-opening" of the closure with Appellant's "opened for the first time." In the English language, "re-opened" and "opening for the first time" have different meanings.⁶⁷ There is therefore, no *prima facie* showing of obviousness to support the rejection of claim 3.

Moreover, the Paper No. 20050110 fails to fully consider the state of the art. As is explained

⁶⁵ Dubach '938, column 1, lines 24 and 25.

⁶⁶ "For the first time" has significant meaning in technical as well as vernacular language. Newborn infants, by way of example, sometimes open their eyes "for the first time" on an occasion long remembered by the parents, one or more days subsequent to birth, and then proceed to first focus their eyes in response to movement on an even later occasion. It makes no sense, at least to its family, in reference to an infant who was born with its eyes opened and focused, to claim that the infant opened his eyes for the first time only after the infant, subsequent to its birth with eyes "completely opened", subsequently closed and then re-opened his eyes. That re-opening can not be accurately defined by the English language phrase "for the first time."

⁶⁷ Nothing in the record before the Board permits equation of the verb "reopened" with Appellant's "opened for the first time."

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by Applicant alone, in the prior art, the event which occurs *for the first time* is the that act when “[t]hese tear-off lips or thin areas must be removed or deliberately destroyed on opening *for the first time*.”⁶⁸ The Examiner’s proposed combination gives no definition to the phrase *for the first time*. Consequently, any reading of this phrase which is contrary to the teachings of Applicant is unsupported by the record before the Board; consequently, the record is devoid of factual support for the assertion of Paper No. 20050110 that the Examiner’s proposed combination teaches:

“an element to initially secure the two closure parts together in a closed position ... [to provide] a tamper-indication arrangement ... [that] ensures the integrity of the contained product prior to first use.”⁶⁹

Moreover, the express teachings of the prior art establish that the closure of the Examiner’s proposed combination is manufactured “in a completely opened state”⁷⁰ and is therefore, unable to make a *prima facie* showing of anticipation of Appellant’s structure which has:

“the first and the second closure parts, in the closed position of the closure, connected by at least one coupling element which is destroyed or removed when the closure is opened for the first time.”⁷¹

The Board is therefore respectfully requested to refuse to sustain this rejection.

Claim 4

Claim 4, which depends upon claim 3, defines the “coupling element” as being “a web or a

⁶⁸ Specification, page 1, lines 21 through 23.

⁶⁹ Paper No. 20050110, page 4.

⁷⁰ Dubach ‘938, column 1, line 24.

⁷¹ Claim 3, lines 2 through 4.

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tear-off lip.” Absent from the Examiner’s proposed combination is any teaching of how that combination may be constructed to meet Appellant’s structural criterion of destroying or removing that “web or tear-off lip” from the Examiner’s proposed combination “*when the closure is opened for the first time.*” This structural feature is an attribute of Appellant’s “closed injection moulded” closure, the advantages of which (i) cheaper to manufacture, (ii) enablement of a simpler mold, and most significantly for claims 3, 4 and 16, (iii) suitability for “integrating and original warranty seal without substantial additional cost”⁷² were detailed in Appellant’s originally filed specification. Given these differences over the Examiner’s proposed combination and the noted results advantageously flowing from those differences, this rejection should not be sustained.

Claim 16

Claim 16, which depends directly upon claim 3, defines the coupling element as:

“having a predetermined breaking point.”

The Examiner’s proposed combination teaches “a plastic closure” with a “security band 3 [that] is injection molded via bars 6 to the lower edge 2’ of the upper part 2. The bars 6 form predetermined breaking points which are destroyed when the security band 3 is removed.”⁷³

The Examiner’s proposed combination including Dubach ‘938 emphatically teaches that,

“[s]nap hinge closures are for the most part *injection-molded in a completely open state* and are closed afterwards.”⁷⁴

⁷² Original specification, page 1, lines 17 through 19.

⁷³ Dubach ‘938, column 2, lines 63 through 67.

⁷⁴ Dubach ‘938, column 1, lines 23 through 25.

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The Examiner's proposed combination including Dubach '938 also expressly teaches that,

"[i]t is one object of this invention to provide a snap hinge closure of the previously mentioned type" ⁷⁵

Claim 16 however, expressly defines a "closed injection moulded closure" Singularly absent from the Examiner's proposed combination is any teaching of anything other than a closure that is "injection-molded in a *completely open state*"; completely absent is Applicant's "closed injection moulded closure ...", whether with, or without Appellant's "coupling element having a predetermined breaking point." The assertions set forth in Paper No. 20050110 are specious and without merit. Consequently, there is no basis on the record before the Board to establish a *prima facie* showing of obviousness, and this rejection should not be sustained.

D. Rejection Of Claim 18 Under 35 U.S.C. §103(a)

2. Claim 18 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Nozawa '912 modified according to Altherr (U.S. Pat. No. 5,270,011). This rejection is not sustainable on the record before the Board for the following reasons.

Supplementation of Nozawa '912 with Altherr '011 fails however, to remedy the foregoing deficiencies in the primary reference. Consequently, there is no basis on the record before the Board to establish a *prima facie* showing of obviousness, and this rejection should not be sustained. Such action is respectfully requested.

⁷⁵ Dubach '938, column 2, lines 6 and 7.

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P56559PCT**E. Rejection Of Claim 20 Under 35 U.S.C. §103(a)**

3. Claim 20 stands rejected under 35 U.S.C. §103(a) as being unpatentable over the Examiner's proposed combination of Nozawa '912 modified according to Gach *et al.* (U.S. Patent No. 4,826,026). This rejection is not sustainable on the record before the Board for the following reasons.

Supplementation of Nozawa '912 with Gach *et al.* '026 fails however, to remedy the foregoing deficiencies in the primary reference. Consequently, there is no basis on the record before the Board to establish a *prima facie* showing of obviousness, and this rejection should not be sustained. Such action is respectfully requested.

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P56559PCT**XI. Conclusion****Rejection of Claims 1 Through 4 And 6 Through 20 Under 35 U.S.C. §112**

Either of the phrases “each said hinge connections”⁷⁶ or “each said pair of hinge connections”⁷⁷ preceded by the phrase “two pairs of hinge connections ...”⁷⁸ necessarily, and positively sets forth more than one angle, contrary to the assertion of Paper No. 20050110 that:

“Claim 1 recites the limitation ‘the planes’ and ‘each said plane’ in lines 9 and 11, respectively. There is insufficient basis for this limitation in the claim. Previously set forth in the claim is ‘each said hinge connections making a first angle with one another and defining a plane.’ This does not positively set forth more than one angle.”

In view of this demonstration of the clarity of the pending claims, there is no basis on the record before the Board to permit this rejection to be sustained.

Rejection of Claims 1, 2, 6-10, 13-15, 17 and 38-43 Under 35 U.S.C. §102(b)

The entirety of the rationale given in Paper No. 20050110 to justify the rejection of claims 1, 2, 6 through 10, 13 through 15, 17 and 38 through 43 under 35 U.S.C. §102(b) as anticipated by Nozawa '912 is brief and consists of two sentences:

“The closure of Nozawa illustrated in figures 6-9”⁷⁹ anticipates the claimed closure. It is noted that the second closure part is stable in the open and closed positions and the hinge planes are inclined

⁷⁶ This is a somewhat incomplete paraphrase of the language of claim 1 at the time Paper No. 20050110 was written.

⁷⁷ This is the language of amended claim 1 before the Board today.

⁷⁸ Claim 1, line 5.

⁷⁹ Figures 6 through 9 of Nozawa '912 illustrate the second embodiment of Nozawa.

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relative to a closure axis (to the degree " α closure axis" is set forth).⁸⁰

In essence, the first of these two sentences is a mere conclusion, while the second sentence is the sole factual basis of record upon which this rejection depends. That factual basis is flawed on its face, fails to provide a *prima facie* showing of anticipation of any of claims 1, 2, 6 through 10, 13 through 15, 17 and 38 through 43, and is incomplete under the all elements rule because single sentence neglects to address several features of Appellant's inventions defined by finally rejected claims 1, 2, 6 through 10, 13 through 15, 17 and 38 through 43.

First, Nozawa '912 neither uses the term *stable* nor recognizes a desirability for his "second closure part [to be] stable in the open and closed positions."⁸¹ If Nozawa '912 does not use the appropriate term, or an equivalent of that term, and if Nozawa '912 does not recognize the existence of a problem in the art, how can Nozawa '912 then be creditably said by Paper No. 20050110 to anticipate Appellant's recognition and solution of that problem?⁸² Appellant teaches that,

"[b]y varying the angles ω and ϕ and their ratio to one another, the

⁸⁰ Paper No. 20050110, page 3.

⁸¹ Paper No. 20050110, page 3, where the Examiner writes that "[i]t is noted that the second closure part is stable in the open and closed positions" Although not asserted by Paper No. 20050110 as a factual basis for its finding of anticipation, the Board is also invited to note that Nozawa '912 also does not recognize the "restricted" and "inadequate" problem associated with his "open function" (see Appellant's specification, page 6, lines 17-22 where the limited angle of opening α (see Appellant's Figure 2) "remains in the region of 80° or less", specification, page 3, line 3) and allows the contents of the container to soil the lid during pouring. (Specification, page 13, lines 12-14).

⁸² Rhetoric aside, Paper No. 20050110 is the sole writing in this art to make this claim "that the second closure part is stable in the open and closed positions." In short, neither the record before the Board nor the teaching found within the four corners of Nozawa '912 support this factual finding of Paper No. 20050110.

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snap-on effect and an opening angle α of the closure are determined”⁸³,

and defines this feature in terms of:

“each said pair of hinge connections making a first angle (ϕ) with one another and defining a plane, planes defined by said two pairs of hinge connections making a second angle (ω) with one another,”⁸⁴

“with a first angle (ϕ) occurring between said first and said second hinge connections of each said pair of hinge connections and each of said pair of hinge connections defining a plane with a second angle (ω) occurring between each said plane,”⁸⁵

and

“a first angle (ϕ) occurring between said first and said second hinge connections of each said pair of hinge connections and each of said pair of hinge connections defining a plane with a second angle (ω) occurring between each said plane ...”⁸⁶

A thorough study of Nozawa '912 finds no teaching of either these features nor any suggestion of Appellant's concepts of Appellant teachings of how to (i) provide this “snap-on effect” and (ii) an adequate “opening angle α ”,

“[b]y varying the angles ω and ϕ and their ratio to one another”⁸⁷.

The single sentence factual finding contained in the sole factual assertion given by Paper No. 20050110 is fantasy, unsupported by the record before the Board; consequently, there is no basis on that record which justifies sustaining this rejection. A refusal to sustain this rejection is therefore,

⁸³ Specification, page 7. lines 20-22.

⁸⁴ Claim 1, lines 8-10.

⁸⁵ Claim 38, lines 9-12.

⁸⁶ Claim 41, lines 13-15.

⁸⁷ Specification, page 7. lines 20-22.

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respectfully urged.

Second, the single sentence rationale given by Paper No. 20050110 continues by stating that,

“and the hinge planes are inclined relative to a closure axis (to the degree ‘ α closure axis’ is set forth).”⁸⁸

What is missing is any identification of this teaching by Nozawa ‘912. Although Nozawa ‘912 describes his “resilient belt plates 7” in numerous passages, nowhere does Nozawa ‘912 either illustrate or suggest that any planes formed by these “resilient belt plates 7” are either (i) *inclined* or (ii) are inclined *relative to any axis of his “lid member.”* Indeed, Figure 8, the sole view of the second embodiment of Nozawa ‘912 that has any materiality to this issue, indicates that any planes formed by “resilient belt plates 7, 7” are consistently parallel to axis 30 of Nozawa ‘912.” The plan view of the first embodiment provided by Figure 4 of Nozawa ‘912 confirms this parallel alignment by showing as lying perpendicular to the plane formed by the sheet of the drawing. To the contrary, Appellant defines a novel structure with:

“each said pair of hinge connections making a first angle (ϕ) with one another and defining a plane, planes defined by said two pairs of hinge connections making a second angle (ω) with one another, wherein, in a closed position of the closure, each said plane is inclined relative to a central closure axis,”⁸⁹

“with a first angle (ϕ) occurring between said first and said second hinge connections of each said pair of hinge connections and each of said pair of hinge connections defining a plane with a second angle (ω) occurring between each said plane, with each said plane being

⁸⁸ Paper No. 20050110, page 3.

⁸⁹ Claim 1, lines 8-12.

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and inclined relative to a closure axis of said closure,”⁹⁰

“each said second hinge connection joining bottom sides of said connecting elements to said lower part, with a first angle (ϕ) occurring between said first and said second hinge connections of each said pair of hinge connections and each of said pair of hinge connections defining a plane with a second angle (ω) occurring between each said plane, with each said plane being inclined relative to a central closure axis of said closure”.⁹¹

Under current U.S. practice, no claim is anticipated under 35 U.S.C. §102(b) unless all of the elements are found in exactly the same situation and united in the same way in a single prior art reference.⁹² In point of fact, although Nozawa ‘912 makes an extensive analysis of the structure of each of his “resilient belt plates 7”⁹³ and illustrates in Figures 8 and 9 the kinematic operation of each of his “resilient belt plates 7”, both the analysis and the illustrations are directed to the “resilient belt plates 7” individually; with the arguable exception of a possible suggestion of vertical symmetry in Figure 8, wholly absent from Nozawa ‘912 is any discussion or illustration suggesting either (i) a particular mutual orientation or inclination between a pair of “resilient belt plates 7” or (ii) a specific relation between the pair of “resilient belt plates 7” and some aspect, (e.g., such as an axis of closure) of the “lid” of Nozawa ‘912, or (iii) Appellant’s combination of a particular mutual orientation or inclination and Appellant’s relation between the pair of “hinge connections” and some aspect, (e.g.,

⁹⁰ Claim 38, lines 8-12.

⁹¹ Claim 41, lines 11-16.

⁹² *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). As stated by the *Manual of Patent Examining Procedure*, 8th Ed., Rev. 2, (May 2004), §2131, “a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.”

⁹³ See, by way of example, Nozawa ‘912 beginning at column 5, line 48 and continuing through column 6, line 36.

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such as an axis of closure) of the "closure." Absent teaching or suggestion of inclination between his "resilient belt plates 7", Nozawa '912 lacks an evidentiary basis on the record before the Board with which to support this rejection. The Board is accordingly solicited to refuse to sustain this averment of anticipation.

Third, returning to the single sentence rationale given by Paper No. 20050110, overlooked by this rationale is the fact that Appellant alone made a considered and accurate appraisal of the state of the art and correctly noted that,

"[i]n order to be able to produce the closure 1 in the closed position of the upper closure part 3, the main hinge connection 5 and the tensions bands 6.1, 6.2 [shown in Figure 1] and in particular their connections to the closure parts 2 and 3 *must* be arranged in such a way that they are accessible in the injection mould (not shown) from the *inside* of the closure (arrow 10) and from the *outside* of the closure (arrow 11). *Particularly, the main hinge is difficult to form.* Owing to these facts, the function (snap-on effect) and the arrangement (open position) of the upper closure part in the case of the closures known from the prior art are very restricted and inadequate."⁹⁴

The Board is invited to consider that Appellant's recognition of the existence of these problems in the art, together with Appellant's specific identification of the sources of these problems, is itself novel, and that Appellant's implementation of this principles, which have been variously defined in the finally rejected claims,

"the two pairs of hinge connections are accessible in the mould from the inside of the closure and from the outside of the closure and can

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Specification, page 6, lines 10 through 18. Emphasis added.

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be removed from the mould”,⁹⁵

“the two pairs of hinge connections being accessible in a mould from the inside of the closure and from the outside of the closure”,⁹⁶

and

“the two connecting elements and the two pairs of hinge connections being accessible in a mould from the inside of the closure and from the outside of the closure”,⁹⁷

is neither taught nor suggested by Nozawa ‘912. Consequently, there is no basis on the record before the Board to justify sustaining this rejection of claims 1, 2, 6 through 10, 13 through 15, 17 and 38 through 43. Such action is respectfully requested.

Fourth, the single sentence rationale improperly makes a determination of anticipation under 35 U.S.C. §102(b) without consideration of Appellant’s teaching of *accessible in the mould from the inside of the closure and from the outside of the closure*⁹⁸ which facilitates closed injection moulding. As earlier noted in the foregoing remarks, mating of “plug 4” with “pouring port 2”, together with the erection of the walls of grooves 8, 9 between “resilient belt plates 7” and the interior hollow chamber between closed lid 3 and main body 1, among other aspects of Nozawa ‘912 singularly denies to Nozawa ‘912 Appellant’s access “in the mould from the inside of the closure

⁹⁵ Claim 1, lines 12 and 13.

⁹⁶ Claim 38, lines 12-14.


⁹⁷ Claim 41, lines 16-18.

⁹⁸ Claim 1, lines 12 and 13.

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and from the outside of the closure”⁹⁹ because were an attempt be made to mould Nozawa ‘912 in Appellant’s *closed position*¹⁰⁰, a sealed, hollow chamber would be created between the underside of lid 3 and the “upper surface of the main body (1)”¹⁰¹ of Nozawa ‘912 which would deny to Nozawa ‘912 Appellant’s advantage of *hinge connections [that] are accessible in the mould from the inside of the closure and from the outside of the closure.*”¹⁰² Under 35 U.S.C. §102(b), “all words in a claim must be considered in judging the patentability of that claim against the prior art.”¹⁰³ Where, as here, the record reveals an absence of consideration of the language of the claims, there is no basis in the record to sustain the anticipation rejection, and the rejection must be reversed.

Respectfully submitted,


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- ⁹⁹ Claim 1, lines 12-14, claim 38, lines 12-14, and claim 41, lines 16-18.
- ¹⁰⁰ Claim 1, line 11.
- ¹⁰¹ Nozawa ‘912, column 2, lines 10 and 11.
- ¹⁰² Claim 1, lines 12 and 13.
- ¹⁰³ *In re Wilson*, 424 F.2d 1382, 165 USPQ 494, 496 (CCPA 1970), and *MPEP* §2143.03.

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VIII. APPENDIX

CLAIMS UNDER APPEAL (1-4, 6-20, 35-46)

1 1. (Previously Presented) A closed injection moulded closure, comprising:
2 a first closure part;
3 a second closure part; and
4 two connecting elements connected to the first closure part and the second closure part by
5 two pairs of hinge connections, each said pair of hinge connections having a first hinge connection
6 and a second hinge connection, each said first hinge connection connecting upper sides of said
7 connecting elements to said first closure part, each said second hinge connection connecting bottom
8 sides of said connecting elements to said second closure part, each said pair of hinge connections
9 making a first angle (ϕ) with one another and defining a plane, planes defined by said two pairs of
10 hinge connections making a second angle (ω) with one another, wherein, in a closed position of the
11 closure, each said plane is inclined relative to a central closure axis, and the two connecting elements
12 and the two pairs of hinge connections are accessible in the mould from the inside of the closure and
13 from the outside of the closure and can be removed from the mould;

14 said closed injection moulded closure being free from a main hinge connection between said
15 first closure part and said second closure part.

16 2. (Previously Presented) The closed injection moulded closure according to claim 1,
17 further comprised of the first and the second closure parts, in the closed position of the closure,

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18 functionally separated from one another by at least one gap.

19 3. (Previously Presented) The closed injection moulded closure according to claim 1,
20 further comprised of the first and the second closure parts, in the closed position of the closure,
21 connected by at least one coupling element which is destroyed or removed when the closure is
22 opened for the first time.

23 4. (Previously Presented) The closed injection moulded closure according to claim 3,
24 wherein said coupling element is a web or a tear-off lip.

25 5. (Cancelled)

26 6. (Previously Presented) The closed injection moulded closure according to claim 1,
27 further comprised of the connecting elements in an opened position having no geometric
28 deformations relative to an injection moulded state.

29 7. (Previously Presented) The closed injection moulded closure according to claim 1,
30 wherein an opening angle (α) between the first closure part and the second closure part in an open
31 position of the closure is 150° to 180°.

1 8. (Previously Presented) The closed injection moulded closure according to claim 1,

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wherein the relationship among an opening angle (α) between the first closure part and the second closure part in an open position of the closure, the first angle (ω) and the second angle (ϕ) is given by the following formula:

$$\phi = 2 \cdot \arctan \left[\frac{\sin(\alpha / 2)}{1 - \cos(\alpha / 2)} \cdot \sin(\omega / 2) \right].$$

9. (Previously Presented) The closed injection moulded closure according to claim 1, further comprised of the connecting elements being integrated into outer contours of the first and the second closure parts.

10. (Previously Presented) The closed injection moulded closure according to claim 1, wherein the first closure part is adjacent to the second closure part and the first and the second closure parts are actively connected to a container, at least one closure part being detachably and actively connected to the container.

11. (Previously Presented) A closed injection moulded closure, comprising:
a first closure part;
a second closure part; and
two connecting elements connected to the first closure part and the second closure part by two pairs of hinge connections, each said pair of hinge connections having a first hinge connection and a second hinge connection, each said first hinge connection connecting upper sides of said connecting elements to said first closure part, each said second hinge connection connecting bottom

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8 sides of said connecting elements to said second closure part, each said hinge connections making
9 a first angle (ϕ) with one another, and defining two planes making a second angle (ω) with one
10 another, wherein, in a closed position of the closure, each of said planes is inclined relative to a
11 central closure axis and the two connecting elements and the two pairs of hinge connections are
12 accessible in the mould from the inside of the closure and from the outside of the closure and can
13 be removed from the mould;

14 each of said connecting elements having a shorter edge and a longer edge, said shorter edge
15 being closer to an apex of said first angle (ϕ) than said longer edge and being pressure-resistant, said
16 longer edge lengthening elastically and reversibly under a tensile stress; and

17 said closed injection moulded closure being free from a main hinge connection between said
18 first closure part and said second closure part.

1 12. (Previously Presented) The closed injection moulded closure according to claim 11,
2 further comprised of said longer edge being of a three-dimensional curvature.

1 13. (Previously Presented) The closed injection moulded closure according to claim 1,
2 further comprised of said two pairs of hinge connections being film hinge connections.

1 14. (Previously Presented) The closed injection moulded closure according to claim 1,
2 further comprised of said first closure part having at least two stable positions including at least one
3 open position and the closed position.

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1 15. (Previously Presented) The closed injection moulded closure according to claim 1,
2 wherein said first closure part has an open position, the closed position and at least one intermediate
3 open position

1 16. (Previously Presented) The closed injection moulded closure according to claim 3,
2 further comprised of said coupling element having a predetermined breaking point.

1 17. (Previously Presented) The closed injection moulded closure according to claim 1, said
2 two connecting elements connected to each other by means of a film hinge connection.

1 18. (Previously Presented) The closed injection moulded closure according to claim 1,
2 further comprised of said first closure part having a tubular element on an inner side of said first
3 closure part, said tubular element corresponding to an opening of the container, said tubular element
4 sealing the opening of the container, said tubular element having an edge thickened by a bead.

1 19. (Previously Presented) A closed injection moulded closure, further comprising:
2 a first closure part;
3 a second closure part;
4 means for partially stiffening the first and the second closure parts; and
5 two connecting elements connected to the first closure part and the second closure part by

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two pairs of hinge connections, each said pair of hinge connections having a first hinge connection and a second hinge connection, each said first hinge connection connecting upper sides of said connecting elements to said first closure part, each said second hinge connection connecting bottom sides of said connecting elements to said second closure part, each said hinge connections making a first angle (ϕ) with one another, and defining two planes making a second angle (ω) with one another, wherein, in a closed position of the closure, each of said planes is inclined relative to a central closure axis and the two connecting elements and the two pairs of hinge connections are accessible in the mould from the inside of the closure and from the outside of the closure and can be removed from the mould, said closed injection moulded closure being free from a main hinge connection between said first closure part and said second closure part.

20. (Previously Presented) The closed injection moulded closure according to claim 1, further comprised of said first closure part having a catch for preventing unintentional opening of the closure.

21. (Previously Presented) A closure for a container, comprising:
a first closure part;
a second closure part to be placed on the container, said first closure part opening and closing the container by moving relative to said second closure part;
at least two connecting elements connecting said first closure part and said second closure part, each said connecting element having a first side separated from a second side, by an

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7 intermediate third side spaced-apart from an intermediate fourth side, said fourth side being longer
8 than said third side; and

9 two pairs of hinge connections, each said pair of hinge connections comprising a first hinge
10 connection and a second hinge connection, said first side of each said connecting element connected
11 to said first closure part via said first hinge connection, said second side of each said connecting
12 element connected to said second closure part via said second hinge connection, wherein in a closed
13 position of the closure each said first hinge connection is closer to an axis of closure than are said
14 second hinge connection, with said first closure part assuming at least two stable positions and
15 assuming unstable positions between said at least two stable positions and with the two connecting
16 elements and the two pairs of hinge connections being accessible in a mould from the inside of the
17 closure and from the outside of the closure and being removable from the mould;

18 said closure being free from a main hinge connection between said first closure part and said
19 second closure part.

1 22. (Previously Presented) The closure of claim 21, comprised of said two connecting
2 elements and the two pairs of hinge connections being accessible in the mould from the inside of the
3 closure and from the outside of the closure.

1 23. (Previously Presented) The closure of claim 21, wherein said third sides of said
2 connecting elements are pressure-resistant.

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1 24. (Previously Presented) The closure of claim 21, wherein, in a closed position of the
2 closure, each said connecting element has a curved outer contour.

1 25. (Previously Presented) The closure of claim 21, wherein said at least two connecting
2 elements are integrated into an outer contour of the closure.

1 26. (Previously Presented) The closure of claim 21, wherein, in a closed position of the
2 closure, said two connecting elements and said two pairs of hinge connections are in approximately
3 stress-free states.

1 27. (Previously Presented) The closure of claim 21, wherein torsional rigidities of said third
2 sides are higher than torsional rigidities of said fourth sides.

1 28. (Previously Presented) The closure of claim 21, comprising a coupling element coupling
2 the first closure part and the second closure part, said coupling element being destroyed when the
3 first closure part is separated from said second closure part for the first time.

1 29. (Previously Presented) The closure of claim 21, comprising an auxiliary connection
2 between said two connecting elements.

1 30. (Previously Presented) The closure of claim 21, wherein said second closure part has a

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1 tubular element on an inner side of said second closure part, said tubular element has an edge
2 thickened by a bead, and said tubular element has a shape corresponding to an opening of the
3 container to act as a seal when in a closed position.

4 31. (Previously Presented) The closure of claim 21, further comprising means for partially
5 stiffening the first and the second closure parts.

1 32. (Previously Presented) The closure of claim 21, further comprising a catch for preventing
2 unintentional opening of the closure.

1 33. (Previously Presented) The closure of claim 21, wherein an opening angle between the
2 first closure part and the second closure part in an open position of the closure is 150° to 180°.

1 34. (Previously Presented) The closure of claim 21, wherein a relationship among an opening
2 angle (α), a first angle (ϕ) and a second angle (ω) is given by the following formula:

3

$$\phi = 2 \cdot \arctan \left[\frac{\sin(\alpha/2)}{1 - \cos(\alpha/2)} \cdot \sin(\omega/2) \right]$$

4 where said opening angle (α) is an angle between the first closure part and the second closure
5 part in an open position of the closure;

6 said first angle (ϕ) is defined by said first and said second hinge connections of each said pair
7 of hinge connections; and

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8 said second angle (ω) is an angle made by two planes, each of said two planes defined by
9 each said pair of hinge connections.

1 35. (Withdrawn) A closed injection moulded process, comprising:
2 simultaneously moulding in a closed position, an entirety of a closure comprised of a first
3 closure part mated in a closed position against a second closure part, and two connecting elements
4 spaced-apart by an intermediate gap, connected to the first closure part and the second closure part
5 by two pairs of hinge connections, each said pair of hinge connections having a first hinge
6 connection and a second hinge connection, each said first hinge connection joining upper sides of
7 said connecting elements to said first closure part, each said second hinge connection joining bottom
8 sides of said connecting elements to said second closure part, each said pair of hinge connections
9 making a first angle (ϕ) with one another and defining a plane, the planes defined by said two pairs
10 of hinge connections making a second angle (ω) with one another, wherein, in the closed position
11 of the closure, each said plane is inclined relative to a central closure axis, with the two connecting
12 elements and the two pairs of hinge connections being accessible in the mould from the inside of the
13 closure and from the outside of the closure; and
14 removing the closure from the mould.

1 36. (Withdrawn) The process of claim 35, comprised of forming an opening angle between
2 the first closure part and the second closure part to occur between approximately 150° to 180° while
3 said first closure part is displaced from said closed position to an open position of the closure.

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1 37. (Withdrawn) The process of claim 35, wherein a relationship among an opening angle
2 (α), said first angle (ϕ) and said second angle (ω) is given by a formula of:

3
$$\phi = 2 \cdot \arctan \left[\frac{\sin(\alpha / 2)}{1 - \cos(\alpha / 2)} \cdot \sin(\omega / 2) \right]$$

4 where said opening angle (α) is an angle between the first closure part and the second closure
5 part while said first closure part is rotatably displaced from said closed position to an open position
6 of the closure.

1 38. (Previously Presented) A closure for a container, comprising:
2 a lower closure part oriented to engage an opened end of the container;
3 an upper closure part disposed to assume at least two spatially defined and stable positions
4 relative to said lower closure part; and
5 two connecting elements spaced-apart by an intermediate gap, joining said lower closure part
6 and said upper part by two pairs of hinge connections, each said pair of hinge connections having
7 a first hinge connection and a second hinge connection, each said first hinge connection joining
8 upper sides of said connecting elements to said upper closure part, each said second hinge connection
9 joining bottom sides of said connecting elements to said lower part, with a first angle (ϕ) occurring
10 between said first and said second hinge connections of each said pair of hinge connections and each
11 of said pair of hinge connections defining a plane with a second angle (ω) occurring between each
12 said plane, with each said plane being inclined relative to a closure axis of said closure, the two

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13 connecting elements and the two pairs of hinge connections being accessible in a mould from the
14 inside of the closure and from the outside of the closure and being removable from the mould;
15 said closure being free from a main hinge connection between said first closure part and said
16 second closure part.

1 39. (Previously Presented) The closure of claim 38, comprised of said upper closure part
2 forming an opening angle with said lower closure part between approximately 150° to 180° while
3 said upper closure part is displaced from a closed position mating with said lower closure part, to
4 an open position of the closure.

1 40. (Previously Presented) The closure of claim 38, wherein a relationship among an opening
2 angle (α), said first angle (ϕ) and said second angle (ω) is given by a formula of:

3
$$\phi = 2 \cdot \arctan \left[\frac{\sin(\alpha / 2)}{1 - \cos(\alpha / 2)} \cdot \sin(\omega / 2) \right]$$

4 where said opening angle (α) is an angle between the first closure part and the second closure
5 part while said first closure part is rotatably displaced from said closed position to an open position
6 of the closure.

1 41. (Previously Presented) A closure for a container, comprising:
2 a lower closure part oriented to engage an open end of the container;
3 an upper closure part disposed to mate with said lower closure part, along a peripheral

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4 junction that forms a demarcation between said lower closure part and said upper closure part when
5 said closure is in a closed position of said closure, and joined to said lower closure part by at least
6 one frangible element traversing said peripheral junction while said closure maintains a virginity of
7 said closed position; and

8 two connecting elements spaced-apart by an intermediate gap movably joining said lower
9 closure part and said upper part by two pairs of hinge connections, each said pair of hinge
10 connections having a first hinge connection and a second hinge connection, each said first hinge
11 connection joining upper sides of said connecting elements to said upper closure part, each said
12 second hinge connection joining bottom sides of said connecting elements to said lower part, with
13 a first angle (ϕ) occurring between said first and said second hinge connections of each said pair of
14 hinge connections and each of said pair of hinge connections defining a plane with a second angle
15 (ω) occurring between each said plane, with each said plane being inclined relative to a central
16 closure axis of said closure, and the two connecting elements and the two pairs of hinge connections
17 being accessible in a mould from the inside of the closure and from the outside of the closure, with
18 the closure being removable from the mould.

1 42. (Previously Presented) The closure of claim 41, comprised of an opening angle formed
2 between the first closure part and the second closure part to extend between approximately 150° to
3 180° while said first closure part is displaced from said closed position to an open position of the
4 closure.

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1 43. (Previously Presented) The closure of claim 41, with said closure providing a
2 relationship among an opening angle (α), said first angle (ϕ) and said second angle (ω) given by a
3 formula of:

$$\phi = 2 \cdot \arctan \left[\frac{\sin(\alpha/2)}{1 - \cos(\alpha/2)} \cdot \sin(\omega/2) \right]$$

5 where said opening angle (α) is an angle between the first closure part and the second closure
6 part while said first closure part is rotatably displaced from said closed position to an open position
7 of the closure.

1 44. (Withdrawn) A closed injection moulded process, comprising:
2 simultaneously moulding in a closed position, an entirety of a closure comprised of a first
3 closure part mated in a closed position against a second closure part along a peripheral junction that
4 forms a demarcation between said lower closure part and said upper closure part, and joined to said
5 lower closure part by at least one frangible element traversing said peripheral junction while said
6 closure maintains a virginity of said closed position; and
7 two connecting elements spaced-apart by an intermediate gap, connected to the first closure
8 part and the second closure part by two pairs of hinge connections, each said pair of hinge
9 connections having a first hinge connection and a second hinge connection, each said first hinge
10 connection joining upper sides of said connecting elements to said first closure part, each said second
11 hinge connection joining bottom sides of said connecting elements to said second closure part, each
12 said pair of hinge connections making a first angle (ϕ) with one another, and defining a plane, the

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13 planes defined by said two pairs of hinge connections making a second angle (ω) with one another,
14 wherein, in the closed position of the closure, the planes are inclined relative to a closure axis, with
15 the two connecting elements and the two pairs of hinge connections being accessible in the mould
16 from the inside of the closure and from the outside of the closure; and
17 removing the closure from the mould.

1 45. (Withdrawn) The process of claim 44, comprised of forming an opening angle between
2 the first closure part and the second closure part to occur between approximately 150° to 180° while
3 said first closure part is displaced from said closed position to an open position of the closure.

1 46. (Withdrawn) The process of claim 44, wherein a relationship among an opening angle
2 (α), said first angle (ϕ) and said second angle (ω) is given by a formula of:

3
$$\phi = 2 \cdot \arctan \left[\frac{\sin(\alpha/2)}{1 - \cos(\alpha/2)} \cdot \sin(\omega/2) \right]$$

4 where said opening angle (α) is an angle between the first closure part and the second closure
5 part while said first closure part is rotatably displaced from said closed position to an open position
6 of the closure.